# The solution to the Rubiks Cube or Magic Cube 

## - How to solve the Rubiks Cube follow these instructions

The first step to complete the Rubiks Cube.
Complete just one face of the cube. You will at some point encounter one of the following five conditions.

Follow the set of moves that apply.
TIP. Hold the cube in the same position all the time! (silly, but it's all to easy to change the position of your cube as you start to rotate the different planes).


turn $90^{\circ}$

furn $180^{*}$

turn $90^{\circ}$

turn $90^{\circ}$

turn $90^{\circ}$

turn $90^{\circ}$

turn $180^{\circ}$

turn $90^{\circ}$

turn $180^{\circ}$

turn $90^{\circ}$

## Now you have the top of the cube as all one colour!

The next step is to get all the surrounding edge colours the same and for them to match their corresponding center colours. This creates a T shape as indicated below.


There are two solutions to achieve the above stage. Follow the one that applies.

Swap the

furn $90^{\circ}$

furn $90^{\circ}$

furn $90^{\circ}$
furn $90^{\circ}$

furn $90^{\circ}$

furn $90^{\circ}$


Swap the positions of $\mathbf{1}$ and $\mathbf{2}$

furn $90^{\circ}$

turn $90^{\circ}$

furn $90^{\circ}$

turn $90^{\circ}$

turn $180^{\circ}$

furn $90^{\circ}$


The next stage is to complete 2 layers of the cube. As above.
To achieve this stage you must now turn your cube upside down. The T shape now turned on its head. Again there are two methods of achieving this next stage. You may need to use one or both methods to complete.

turn $90^{\circ}$



Swap the positions of 1 and 2

turn $90^{\circ}$

furn $90^{\circ}$

turn $90^{\circ}$

Swap the positions of $\mathbf{1}$ and $\mathbf{2}$




Now follow the next set of moves to achieve a cross shape on the top of the cube as indicated below. Keep turning the cube as indicated below until an L shape appears as above. Keeping this $L$ shape in the position above (furthest away from you). In this position you will only need to follow the next set of moves once again to achieve the cross.


Top View


The next stage to completing the cube is to get all the top corner squares, matching the corresponding side colours. To do this you must first align one corner only so that it matches it's corresponding side colours (this corner may not match exactly). This corner is then taken as the reference point. If 2 or 3 corners match their corresponding side colours then keep making either of the moves outlined below until only one corner matches. Then follow one of the steps below to get all corners in the right position.

(3)

Move 1 to
2, 2 to 3 and 3 to 1

turn $90^{\circ}$

furn $90^{\circ}$

furn $90^{\circ}$
3, 3 to 2 and 2 to 1

furn $90^{\circ}$

furn $90^{\circ}$

turn $90^{\circ}$

furn $90^{\circ}$

furn $90^{\circ}$

turn $90^{\circ}$

turn $90^{\circ}$


turn $90^{\circ}$

When all four top corners are in their correct positions (although colours may not align) proceed to the either or both of the next stages. Now your reference point has changed
again. Keep the corner that is correct in it's position as indicated "fixed" as you turn the planes according to the following moves.
This set of moves rotates three of the four corners.

turn $90^{\circ}$

furn $90^{\circ}$
furn $90^{\circ}$
turn $90^{\circ}$

furn $90^{\circ}$
furn $90^{\circ}$

turn $180^{\circ}$


furn $90^{\circ}$
turn $90^{\circ}$

turn $180^{\circ}$
turn $90^{\circ}$

turn $90^{\circ}$
furn $90^{\circ}$

turn $180^{\circ}$

turn $90^{\circ}$


You may find that you have already completed the cube at this stage. If however you have not you will find yourself in the following position

1. Two or Three of the top center squares are in the correct position

## 2. Three of the top center squares are in the wrong position.

1. If two or three of the top center squares are in the correct position, you must make the moves as indicated below until only one center square is in the correct position then follow the moves once or twice more to complete the cube.
2. With one center colour in its correct position make the moves indicated below to complete the cube. You may need to make these moves a few times to complete.


furn $90^{\circ}$

turn $90^{\circ}$

turn $90^{\circ}$

turn $180^{\circ}$

turn $90^{\circ}$

furn $90^{\circ}$

furn $90^{\circ}$


turn $180^{\circ}$
turn $90^{\circ}$


turn $90^{\circ}$

directfx.co.uk
http://www.scaredcat.demon.co.uk/rubikscube/the_solution.html
